MYRMECIA

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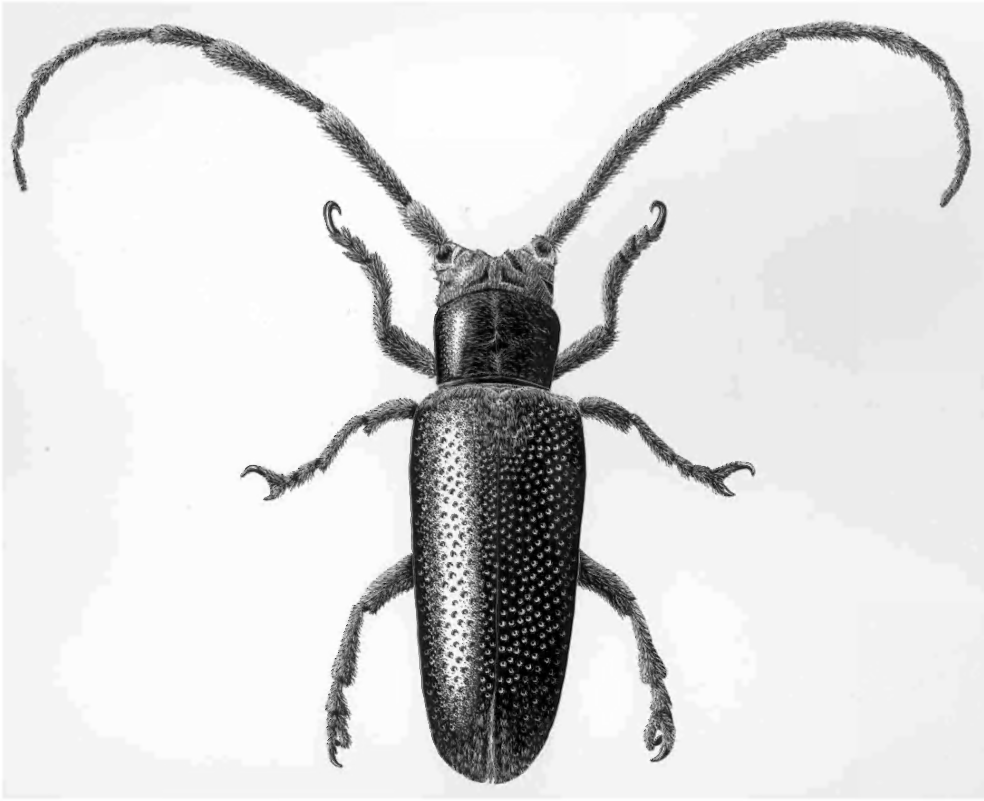

THE COVER. The cover for this year's *Myrmecia* features an illustration of a Cerambycid beetle by Meaghan Meredith, University of Newcastle. Meaghan's drawing was Highly Commended in the Student Section of the 2008 AES Illustration Competition.

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NOTICE

Statements made in *Myrmecia* do not necessarily represent the views of the Australian Entomological Society.

COPY DEADLINE FOR NEXT ISSUE

Material for publication in the May issue of *Myrmecia* should be in the inbox of the Editor by Friday **10 April 2009**.

Submissions should be made via email to smbroughton@agric.wa.gov.au.

PRESIDENT'S REPORT - ON MEETINGS

Attending large conferences is always a little taxing. The ESA meeting in Reno late last year was no exception. It was large. So many concurrent sessions to choose from, and most of the ones I was interested in clashed. That is what happens when one is a bit of a dabbler with so many diverse interests in entomology.

The Americans do some things very well. What was unusual about this meeting was the number of sessions honouring the contribution of some big names to entomology - the Taubers, Wendel Roelofs, just to name a few. I went to some of these and it was interesting to hear past students and postdocs of these luminaries, who have themselves gone on to do good things, laud their mentors, as well as talk about their own ideas and findings. In Australia we rarely acclaim our intellectual mentors publicly. We are more likely to cut down poppies that rise above the norm.

The number and quality of student presentations at Reno was impressive. As I listened to some of these I was struck by the fact that individually they were not vastly different to Australian students that presented at our own recent meeting in Orange. No need for cultural cringe here and it bodes well for the future in Australia, assuming our fearless political leaders can do more than sniff the breeze. Interestingly I ran into a number of Australian colleagues at the Reno meeting that I had not seen at our own most recent meeting. This caused me to reflect on our societies meetings and attendance. Is it just size that differs and matters (the recent torrent of unsolicited spam email notwithstanding)?

The US meeting ran for about 4 days, had some 3000 participants with numerous concurrent sessions on any one day. Our society has about 500 members (about 1/12 of the US Society). Our own meeting in Orange had about 100 attendees, which ran for 3 days with no

concurrent sessions. So proportionally far fewer of our members participate.

One of the nice things about our own annual meeting is that you can go to it all! Participation and debate are possible. We allow more time for questions, although I must confess I was a little disappointed in the discussion that took place during and after sessions in Orange. I would certainly urge all that attend meetings and in particular senior scientists that have nothing to loose, to ask questions and get into it.

So how do we get better participation at meetings in Australia? If you have complaints, or better still, improvements that would get you along, let the organising committee know what you need/ want in a meeting, or write to the executive or your local councillor.

The meeting in Darwin later this year promises to be larger than usual, being a joint meeting with a number of other groups. It will be a 4-day symposium entitled "Darwin 200: Evolution and Biodiversity" to be held from 25-28 September 2009. The major themes of this symposium will relate to evolution, biogeography, biodiversity and biosecurity, with particular emphasis on northern Australia and Southeast Asia. That meeting follows on from the Charles Darwin Symposium, 22-24 September 2009, hosted by Charles Darwin University. This symposium will celebrate the 200th anniversary of Charles Darwin's birth and the 150th anniversary of the publication of The Origin of Species. Please add these dates to your diary and I urge you to consider participating.

During the Reno conference there was a meeting on the sidelines amongst representative of societies on formulating guidelines for Cooperation amongst Entomological societies. This was an initiative of Frantisek Sehnal, the previous chairman of the ICE Council. At the meeting were representatives from the USA, Canada, Czech Republic, Brazil, China, and Australia. The meeting formulated a draft proposal and I will say more on this in the next issue of Myrmecia.

'Meron' ZALUCKI
President

VICE PRESIDENT'S REPORT

This is my first report as AES Vice President. The previous executive passed the society on to us in very good shape, and our thanks go to Murray Fletcher, Graham Thwaite and Geoff Gurr for their careful husbandry of the society of the past 4 years. Our financial position is very healthy, at least partly due to the income from the International Congress of Entomology in 2004. We have an excellent working relationship with our journal publisher, Wiley-Blackwell, and our journal is well supported. However, we face a major challenge to the Society over the life of this executive — to stabilise and increase our membership.

Since a high of just over 600 in 2004, our member numbers have slowly declined owing to a small net loss of members each year. We now have around 470 financial members of the society. While this issue is more chronic than critical at this stage, the new executive believes we need a membership drive to keep our member numbers above 500. The more members we have, the healthier, more vital and relevant our society is in all sorts of ways. Moreover, we have signed a 5-year contract with Wiley-Blackwell based on a minimum membership number of 500, which means that if we have fewer than 500 members, we are in fact paying for subscriptions we don't need.

The executive has discovered that the AES membership of a significant number of entomologists has lapsed over the past few years. The society executive would be grateful if you would act to reconnect entomologists with the society in your workplace or your local area. If every member manages to sign up one lapsed member, or introduce a postgraduate student or new entomologist to the society, our target of 500 will be reached easily. Have some membership forms (available from the Society website at http://www.austentsoc.org.au) printed out ready to sign up members on the spot. For lapsed members, the Executive has agreed to a one-year moratorium on the payment of membership fees in arrears (until Nov 2009).

We recognise that one of the main tangible benefits of Society membership is access to the society journal. As many professional entomologists have access to this publication through their employer, the benefit of the journal

is significantly discounted for these members. Many of the other benefits of membership to the society are more intangible, but are particularly relevant to young entomologists beginning and building a career. Three main benefits emerge in this category: (1) information exchange through publications such as *Myrmecia* and meetings such as our annual conference, (2) collective representation of shared interests, and (3) involvement in professional networks and professional recognition through service and awards. In addition, members always receive a discounted registration rate for conferences, and can apply for the AES research grants.

Of course, our society is not unique in facing a membership decline. Many scientific societies like ours are facing similar challenges (for example see *Conservation Biology* **22**: 1087-1089, 2008). We must find ways of making society membership more attractive to scientists and others with an interest or passion for insects, or who use insects as model organisms in their work. We would be grateful for any suggestions that you may have for increasing our member numbers.

David YEATES
Vice President

AES SCHOLARSHIPS FOR 2009

The response to the call for applications for 2009 AES scholarships was encouraging, with six applications in all. Sums requested ranged widely, well exceeding the 2009 allocation of $2000, which, since no grants were given in 2008, was boosted by an extra $2000.

Projects selected for funding are diverse:

• A study of maternal/paternal genome conflict over progeny sex ratio, using a sciarid species as the model system: proponents Rebecca Featherston, Mark Elgar & Therésa Jones, with award of $651 for materials; Rebecca is a postgraduate student, the other two applicants are her supervisors.

• Revision of the Australian Lymantriidae: A.P. Mackey, awarded $225 for consumables; Mackey is one of the large group of retirees actively working on taxonomy of Australian insects.

• Investigation of parasitoids of Thaumastocoris species in the Sydney area: Drs Sarah Mansfield & Annie Noack, awarded $785 for travel costs and equipment required to carry out a study in support of a South American biocontrol project.

• Metabolomics of heavy metal exposure in *Chironomus tepperi*: Mrs Cintia Martinez & Dr Yvonne Parsons, awarded $2,339 for materials and NMR spectroscope access; Cintia is a PhD student, Yvonne Parsons her supervisor.

We look forward to being able to report later this year on findings of the work funded.

David YEATES, Vice President
Alice WELLS, Hon. Secretary

ENTOMOLOGY AROUND AUSTRALIA

AUSTRALIAN CAPITAL TERRITORY

ANIC

Once more we have the opportunity to congratulate ANIC staff for their successes. The Head of ANIC, **John LaSalle**, has been awarded a Newton Turner Award by the CSIRO's Office of the Chief Executive Science Team. This is to recognise John's exceptional record in scientific achievement, his extensive national and international networks, and his ability to attract distinguished visiting scientists, postdoctoral fellows, and students.

We also congratulate **Adam Slipinski** and his team, who appeared on the ABC Television program Catalyst in November, in a segment featuring Adam's book *Australian Ladybird Beetles*. The spectacular web site accompanying the ladybird book is now available at http://www.ento.csiro.au/biology/ladybirds/ladybirds.htm and the ABC program on ladybirds can be seen at http://www.abc.net.au/catalyst/stories/2408773.htm. More coverage is included in the "Entomology in the news" section in this newsletter.

Tom Weir and **Natalie Banks** did the long drive to Adelaide to return the primitive weevils section of the Lea collection to the South Australian Museum, as well as a collection of

aquatic Hemiptera. SAM Senior Curator Peter Hudson was glad to see the return of these collections, which had been on loan to ANIC for much too long. **Tom Weir** and **Cate Lemann** went to the EPA in Melbourne to check on the identification of some aquatic bugs. Tom and Cate also put together a display of Australian beetles, which forms part of a major exhibition on Charles Darwin at the National Museum of Australia. The beetles feature in a special section of the exhibition devoted to Darwin's time in Australia.

Peter Hudson of the South Australian Museum (right) takes delivery of a collection of borrowed weevils being returned by Tom Weir (photo Natalie Banks)

Visitors to the Coleoptera laboratory included **Poorani**, from the Bangalore Biological Control Institute in India, who is working on the genera *Scymnodes* and *Apolinus* as part of the ABRS-funded program on a revision of the Australian Coccinellidae. **Hermes Escalona** has completed his visit and returned to Venezuela, after spending several months in Australia and New Zealand working on the Neotropical beetle tribe Sticholotidini (Coccinellidae), and on a phylogeny of the family Salpingidae. We welcome new PhD student **Jiahui Li**, who recently joined the coccinellid project, and who plans to use molecular and morphological data to compile a phylogeny of the tribe Coccinellini. **Adam Slipinski** attended the Entomological Society of America conference in Reno, Nevada, where he spoke about the classification of ladybirds. He also spent some time in the California Academy of Sciences and the University of California in Berkeley, talking with collaborators in a project on the Coleoptera of Chile. **Andrea Schomann** and **Jan Pederson** visited from Denmark to sort out our collection of Staphylinidae, especially the subfamily Paederinae and the genus *Hyperomma*. **Dave Clark** from the Field Museum, Chicago, also visited the Staphylinidae collection, as part of his PhD project on the subfamily Euaesthetinae. Magnus Peterson spent some time sorting Amycterine weevils in the ANIC and Lea collections, and working on some collaborative projects with **Rolf Oberprieler**, including a study of weevils collected during a CALM-sponsored survey of the Pilbara region. **Carlos Valente**, from the Portuguese Research Institute for Forestry and Paper, visited ANIC as part of his search for natural enemies of *Gonipterus* weevils, which are a significant pest of *Eucalyptus* plantations in Portugal. **Thomas Wallenius** is busy working on his PhD project at ANU, sampling volatile compounds from cycads and investigating their role in mediating the behaviour of cycad-pollinating weevils.

The Hymenoptera laboratory has also been busy. **Jordi Paretas-Martinez** from the University of Barcelona visited for two months to work on LucID Keys to families and subfamilies of Australian Cynipoidea, in collaboration with **Matt Buffington** of the Smithsonian Institution. **Michael Batley** from the Australian Museum visited to identify a collection of native bees collected by **Sujaya Rao,** visitor from Oregon State University. The collection consists of about eight drawers of bees, which are now in ANIC. Sujaya has finished her very productive visit, and we wish her well on her return to winter in Oregon. **John La Salle** attended a workshop on invasive *Eucalyptus* gall wasps in Israel in November. He has been involved in a project on the biological control of *Leptocybe invasa* and *Ophelimus maskelli*, which are serious pests of *Eucalyptus* in the Mediterranean Basin, as well as

other areas of the world. It appears that successful biological control is underway for *O. maskelli*, thanks to the importation and establishment of the parasitoid *Closterocerus chamaeleon*. Parasitoids have been released against *L. invasa*, but it is still too early to tell how successful they might be.

Stephen Cameron reports that progress is being made in the molecular systematics of termites. Some initial technical problems have been overcome, and preliminary results are starting to shed some light on species limits in the genus *Coptotermes*.

Mike Hodda has been very busy attending a series of meetings organised by DAFF, to discuss the recent outbreak of Potato Cyst Nematode in a seed-potato growing property in Victoria. Attention has been focussed on developing a sampling strategy to determine the extent of the outbreak so informed decisions can be made about a treatment program.

After his very successful program to install a network of microscopes for remote diagnosis of quarantine pests, **Darren Peck** has left ANIC to take up a position in AQIS in Brisbane. We wish him well in his new position, and we look forward to continued contact with Darren and the other AQIS staff through the improved system of communication he has helped to build.

Michael and **Monica Shaffer** from the Natural History Museum, London, made one of their regular visits to the Lepidoptera laboratory, this time to organise and curate 21 drawers of moths in 4 subfamilies of Pyraloidea. The collection now reflects Michael's unique knowledge of the Pyraloidea of the Indo-Malayan Region. Taxonomic and biological work on scribbly gum moths, involving a team including entomologists **Max Day** and **Marianne Horak** and botanists **Celia** and **Peter Barlow**, is nearing completion. The project will resolve the taxonomy of the moth genus *Ogmograptis* (Bucculatricidae), and reveal for the first time details of the intricate biology of this familiar but poorly understood component of Australian folklore.

Laurence Mound joined **Desley Tree** of QDPI&F for some thrips studies at the Indooroopilly collections. They then flew to Cairns where they were joined by Alice Wells for some intensive field work that yielded many previously unknown thrips taxa. This trip also provided an opportunity for semi-social meetings with **Kerrie Huxham**, **David Rentz**, **Anthony Rice**, and **James Walker**, and for presentation of a talk on thrips at the JCU campus. **Tslila ben David**, from Tel Aviv, visited Canberra for a week to sharpen her thrips identification skills. The year closed with collecting trips to the Hay Plain and Mount Gingera, to find specific thrips taxa.

Bruce HALLIDAY
ACT Regional Councillor

QUEENSLAND

FAR NORTH

DPI&F, Mareeba

Thanks to **Kylie Anderson** for the following news. It was due to go in the last edition of Myrmecia but was stymied by her ornery computer.

The entomology group at Mareeba is currently enjoying the rural surrounds of Southedge Research Station while the labs at Peters Street are being redeveloped. While the latest advice is that the new accommodation will be completed in late November most staff feel that this is very optimistic and that sometime after Christmas will be closer to the mark.

The long-term fate of the Mareeba Insect Collection is still undecided following the passing of **Ross Storey** in June. While opinion generally supports the collection remaining in the north there is the view that it needs to be a working collection overseen by an active taxonomist. If some external dollars are not forthcoming to help fund such a position the collection may well be relocated to Brisbane. In the meantime the collection can be accessed as usual and requests for loan material made through **Harry Fay**.

Leonie Wittenberg finished up in her temporary entomologist's position with DPIF at the end of June, after completing the Australian component of the AusAID/ACIAR project with the Philippines on mango seed weevil. Leonie has commenced a crop scouting business mainly to help service the mango industry on the

Atherton Tableland and from all reports is doing well.

Stef De Faveri visited **Christine Neale** at Indooroopilly in September to discuss progress on the host-testing of *Aphytis chionaspis* (Hymenoptera: Aphelinidae), an exotic parasitoid of mango scale. This parasitoid was introduced into South Africa from Thailand and evidently has had a substantial impact on scale populations.

Harry Fay attended an International Symposium on Recent Progress of Tephritid Fruit Flies Management in Taichung in Taiwan in late June at the invitation of the Taiwan Entomological Society and the Taiwan National University. Apart from also observing some fruit fly research activities south of Taichung he was exposed to the joys of Chinese foot massage and a diagnosis of 'more sleep and more exercise' (something of a conundrum). Harry will be attending an IAEA Consultants' Meeting in Mexico at the end of October on 'Development of Bait Stations for Fruit Fly Suppression in Support of SIT'. This is partly being organised by **Andrew Jessup** in his new role with the IAEA in Vienna. Harry will also stay on to attend the 7th Meeting of the Working Group on Fruit Flies of the Western Hemisphere.

Ian Newton has been appointed to the Senior Entomologist's position in Mareeba vacated by **Bruno Pinese** in 2007. This position will ostensibly drive the mango entomology in Queensland. Ian has spent the past four years as the Research Entomologist at Stahmann Farms pecan plantation near Moree in northern NSW. He did Honours in Science at UNE followed by a Ph.D in entomology at the University of Queensland. He has a strong interest in biopesticides and biological control.

DPI&F Biosecurity Cairns

Jane Royer and **Philippa Nelson** spent a week on Cape York Peninsula conducting a delimiting survey for red-banded mango caterpillar. No new detections have been made outside the Northern Peninsula Area north of the Jardine River. RBMC has been present on the tip of Cape York since 2001 and has been spreading slowly in this region to feral and community mangoes. Jane and Philippa also completed a delimiting survey for *Liriomyza sativae* (vegetable leafminer) in the Torres Straits, with no new detections made. *L. sativae* was earlier detected by **Anthony Rice** from NAQS on one tomato plant on Warraber Island. The plant was removed and destroyed, and the soil raked and burnt to destroy any pupae. Further delimiting surveillance will be conducted early in 2009.

Mark Stanaway is continuing his PhD study on surveillance systems for exotic plant pests at QUT School of Mathematical Sciences (supported by the CRC National Plant Biosecurity) and is currently working on an evaluation of early detection surveillance programs.

Dengue fever has been rife in Cairns with 96 cases recorded so far this summer – the biggest out break since 2003-04. Dengue is a viral disease transmitted by the mosquito *Aedes aegypti.* In Australia *A. aegypti* is currently only found in inland and coastal population centres of Queensland, with dengue confined to north Queensland. Queensland Health's Dengue Action Response Team (DART) is carrying out a 'dengue blitz' in Cairns undertaking yard inspections, setting mosquito traps, and encouraging the public to clean up mosquito breeding sites.

Kylie Anderson would like to thank all contributors over the past three years of her Regional Councillor term.

Jane ROYER
Far North Qld Regional Councillor

SOUTH-EAST

School of Integrative Biology (SIB), UQ

Congratulations to **Bronwen Cribb** and the team at the Centre for Microscopy and Microanalysis. They have been presented with a UQ teaching award for Enhancement of Student Learning. The microscopy unit provides excellent facilities and assistance for student projects, and has been especially valuable for entomological studies. **Hilal Al Shamakhi** (Dubai; MSc student in SIB) has recently been doing a project on termite feeding using equipment at the centre.

2008 was a busy year of conferences for SIB entomologists. A sizeable contingent (**Lyn Cook, Bronwen Cribb, Ezekiel Glaze, Gunter Maywald, Lynda Perkins** and **Myron Zalucki**)

attended the International Congress of Entomology in Durban, Africa, in July. Myron chaired a session in Insect Plant Interactions on "traversing a treacherous landscape", which was co-moderated by Bronwen. Lynda presented work on developing a model of caterpillar movement using pea plants and first-instar larvae of *Helicoverpa armigera*, and Ezekiel presented a talk on modelling plant landscapes. Gunter presented a poster on his chrysomelid systematics research and Lyn talked on plant-scale insect co-radiation. After the congress, Bronwen visited **Frances Duncan** at the University of Witwatersrand. Myron also attended the ESA meeting in Reno. Apart from enjoying the Science sessions he attended an all day Annual Review Editorial Board meeting and various ICE council meetings, as well as representing the Australian Entomological Society in discussion of co-operation amongst societies. He had a great time catching up with colleagues in Reno (a lot of them Australians!) as well as visiting **Steve Malcolm** at UWM and **Tim Paine** (UCR). Several members of **Scott O'Neill's** and **Beth McGraw's** labs attended a *Wolbachia* meeting in Crete. **Sassan Asgari** attended the Australia and New Zealand Biocontrol Conference in Sydney and the Annual Meeting of the Society for Invertebrate Pathology at the University of Warwick, UK. The contents of the talks from the Biocontrol conference will be published in a special issue of Biological Control. **Rebecca Morley** attended the annual AES meeting in Orange, where the website for the National Curriculum in Entomology was launched.

Considerable field work has also been underway. **Mike Furlong** visited Samoa and Fiji to help run Farmer Field Schools as part of an ACIAR project, and Myron visited Samoa (again). **Michelle Rafter** (PhD student with **Gimme Walter**) has been out and about in the field sampling "South African citrus" thrips on mother-of-millions, and spoke at a mother-of-millions field day in Chinchilla. **Lyn Cook** undertook fieldwork in south-west WA and bagged an interesting collection of mainly un-described gall-inducing scale insects. A visit to the Perth Herbarium revealed an additional selection of non-galling scales on some of the herbarium sheets of endemic Myrtaceae from the region. **Gunter Maywald** (Cook lab) has taken some time out of his study of Paropsine beetles and has been in Madrid, Spain, for two weeks teaching a course on CLIMEX to a keen group of Europeans. In the meantime, he has had several colleagues searching south west Western Australia in vain for some of his elusive beasts. The drought (or the cold start to spring/summer) in WA seems to have resulted in low numbers of paropsines, but the east coast collecting over summer has been good.

Dave Merritt has been undertaking field work in Tasmania, where he set up monitoring equipment to assess the light output rhythm of glow-worms that reside in caves at Ida Bay (south of Hobart) and in the Mole Creek region. The results confirmed earlier observations that, in Tasmania, the cave glow-worms maintain a synchronised rhythm of glowing inside the caves. **David Merritt** also visited the Waitomo region in New Zealand to visit colleagues in the glow-worm tourism industry. He gave a talk at the Museum of Caves to tour guides working for several different companies and dispelled a few myths about glow-worm biology. The main Glowworm Cave receives busloads of visitors a day however the staff are working out of temporary quarters awaiting the building of a new facility after the existing building burnt down 3 years ago. David also spoke with DoCS and NIWA staff, and **Travis Cross**, the environmental officer at the Glowworm Cave, about methods of monitoring the populations in the caves. He set up time-lapse equipment in a wild cave to establish the rhythmicity of glow-worm light output, with some interesting results. Possible co-supervision of a masters student from University of Canterbury studying the biology of freshwater aquatic insects (aka glow-worm prey) in the Waitomo region is on the cards. **Darren Wong** (Merritt lab) was awarded his PhD from the University of Queensland this year. His project, titled "In vivo and in vitro expression of resilins from fly and flea", was jointly supervised by **David Merritt** and **Chris Elvin** (CSIRO, Livestock Industries). Two new Honours students (Robyn Willis and Lisa Rigby) will begin projects on glow worms with Dave in 2009.

Scott O'Neill and PhD student **Conor McMeniman** have made national headlines

lately for their success in transferring life-shortening *Wolbachia* from Drosophila to mosquitoes (Science, January 2, 2009). They hope their success will contribute to developing control measures for Dengue-carrying mozzies. **Karyn Johnson** also made the news back in October with another article published in Science (October 30) showing that *Wolbachia* is able to protect Drosophila from a least one type of virus. Her work also has implications for the management of insect-transmitted diseases.

Changes are under way in the O'Neill lab, with several members moving on. **Jeremy Brownlie** has taken a position at Griffith University (Qld), **Markus Riegler** has a position at the University of Western Sydney (NSW) and **Ryuichi Yamada** is also leaving. **Grant Hughes** has been visiting the lab and undertaking experiments on mosquito reproductive biology. Some of **Anne Duplouy's** work on beautiful South Pacific butterflies has been published recently in Molecular Ecology.

There have also been movements in other labs, with **Andrew Manners** (ex Walter lab) starting a new job with Biosecurity Queensland (QDPI&F), having recently submitted his PhD thesis. **Katie Renwick** has joined Sassan's and Mike's labs as a research officer working on interactions of an entomopathogenic fungus and imidacloprid on three vegetable pests. **Paul Cunningham** will be commencing a post-doc in the Zalucki lab on an ARC-funded project titled "Putting smells into context: using in vivo technologies to understand plant-insect odour signalling".

New entomology graduate students to SIB include **Iumenlam Lyngdoh** and **Sanjeev Kumar**, who have joined Sassan Asgari's lab as Masters in Biotechnology students working on improving the efficacy of insect pathogenic viruses using venom proteins from parasitoid wasps and identifying targets for a microRNA expressed by an ascovirus infecting noctuids, respectively. **Paul Lin** (PhD candidate) and **Penny Mills** (Honours student) have joined Lyn Cook's lab to work on the evolution and systematics of scale insects. **Rebecca Morley** has started an Honours project with **Dave Merritt** looking at the response of glow worms to light exposure, and **Mark Mayhew** has begun a PhD project on gland development in Drosophila.

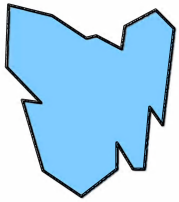
Recent visitors to SIB include **Irene Terry,** who has again been visiting the Walter lab and continuing her work on cycad thrips. **Lloyd Dosdall** (University of Alberta) is currently visiting Mike and Myron to work on DBM-parasitoids and climate. **Matan Shelomi**, a student from Naomi Pearce's group in Harvard, also visited Myron's lab over the northern summer.

Second year entomology students (UQ) wielding a net on a day out in the field

Late in 2008, a large contingent of second-year entomology students enjoyed a bug-catch at Beerwah, run jointly by the Entomological Society of Queensland and the Qld EPA. Students were guided expertly by **Geoff Montieth** and **Chris Lambkin** from the Queensland Museum, learning various methods for trapping and collecting arthropods. Links to images and movies of the day are available on Dave Merritt's web site (www.uq.edu.au/~uqdmerri/Welcome.html).

Lyn COOK
SIB

TASMANIA



University of Tasmania (School of Agricultural Science and TIAR)

Just before Xmas, **Paul Walker**, **Geoff Allen**, **Peter McQuillan** (UTas), John Madden (ex UTas) **Simon Grove**, **Sue Baker**, **Belinda Yaxley** (Forestry Tasmania) and

Cathy Young (DPIW) got together for an informal lunch on campus.

In November, **Lisa Berndt** from SCION, New Zealand, spent a 2 week sabbatical with **Geoff Allen** to work on their collaborative project to assess the potential of *Cotesia urabae* as a biological control agent for the gum leaf skelentoniser (*Uraba lugens*) in New Zealand with UTas honours student **Raylea Parr**. Congratulations are in order to **Stephen Quarrel** who graduated with a 1st class honours degree in Ag Science and won a PhD scholarship to continue his research on earwigs. Over the summer, before the scholarship starts, Stephen is working with **Geoff Allen** and **Paul Walker** on a pilot study to look for evidence of pheromone communication in the chrysomelid *Paropsisterna bimaculata*.

David Merritt (University of Queensland) visited Tasmania in January to continue his project on cave glow-worms and caught up with **Geoff Allen** and **Paul Walker**.

Forestry Tasmania

Carlos Valente from the Research Institute for Forestry and Paper, Portugal, visited **Jane Elek** and **David de Little** in Tasmania to investigate the egg parasitoids of eucalyptus weevils, *Gonipterus* spp., in the natural range of the species that has invaded Portugal. He then visited **Mamoru Matsuki** in WA and **Rolf Oberpreiler** at ANIC.

Paul WALKER
Tas Regional Councillor

WESTERN AUSTRALIA

Western Australian Museum (WAM)

The Entomology Section welcomed a number of visitors during the quarter: **Wojciech Pulawski** (California Academy of Sciences) arrived in October to spend a couple of months collecting sphecid wasps in southern WA and spent some time looking over the WAM wasp collection; **Kelvyn Dunn** visited in November to examine the butterfly collection and discuss accessing WAM data for his Australian butterfly database and atlas; **Stephen Gaimari** (California Department of Food & Agriculture) and **Shaun Winterton** (QDPI) also visited in November to peruse the Diptera collection before heading into the field.

Terry Houston continued his studies of bolboceratine beetle biology and had some limited success in finding immature stages. Planning for the 'new museum' faltered somewhat when a change of government in Western Australia resulted in plans for redevelopment on the old East Perth power-station site being scrapped.

Department of Agriculture and Food WA (DAFWA)

The ranks have recently swelled with the arrival of **Mazé Majer** and **Kathryn McCarren**. Mazé comes to us from Curtin University of Technology (where she did her post-doc with DK-CRC and later worked as consultant entomologist), is currently working with **Darryl Hardie, John Botha, Colin Hanbury** and **George Milne** (UWA) on the project "Plant Biosecurity matters". They are also gathering information sets in support of improved strategies to prevent against the establishment and spread of Emergency Plant Pests (EPP) in Australia. Kathryn most recently was a post-doc with CSIRO under the Weeds CRC, and is in training to replace **Peter Davis**. Lucky he shaved off the mo!

Crazy ants swarm over a red crab

And speaking of mo's, newly-wed **Cameron Brumley** grew an impressive mo in Movember to raise funds and awareness for men's health. Cameron has also decided to undertake an Honours on aphids at Curtin University of Technology this year, with supervisors **Sonya Broughton** and **Jonathan Majer**.

Peter Davis recently took time off to review the Yellow crazy ant (*Anoplolepsis gracilipes*) eradication program on Christmas Island. On his return, Peter presented a very interesting talk about the plight of the Christmas Island fauna and flora, which was well attended by colleagues and other DAFWA staff (photo of ants and crab previous page).

Modika Perera from the Biotechnology group has recently accepted an Adjunct Lecturer Position with the Faculty of Sustainability, Environmental and Life Sciences at Murdoch University. Prior to joining DAFWA, Modika was a researcher at Murdoch University and her current position with DAFWA does not involve research. Therefore she is looking forward to take this opportunity to continue with her ongoing research on entomology, and molecular diagnostics of plant parasitic nematodes.

More recently, Modika has published a paper entitled "First record of infection of Papaya trees with root-knot nematode (*Meloidogyne javanica*). This paper was co-authored by **Ruben Flores-Vargas** (DAFWA entomology) and **Michael Jones (**WA State Agriculture Biotechnology Centre, Murdoch University) and was published in Australasian Plant Diseases Notes.

And finally, the Entomology Christmas Lunch was held at the Como Hotel, with a record turnout this year (see this and previous page).

DAFWA Entomology Christmas Lunch at the Como Hotel. Mazé Major and Richard Johnston.

From top: Andras Szito and Jessica Harrison. Cameron Brumley (post Movember), Michelle Chami and Dave Cousins. Pia Scanlon and Peter Davis. Andras Szito and Peter Davis front of table. (Photos Pia Scanlon).

Curtin University of Technology

Donat Agosti from Zurich and the American Museum of Natural History visited to discuss with **Jonathan Majer** initiatives resulting from the Ants of Leaf Litter (ALL) sampling protocol. The uptake of this innovative standardised sampling protocol has been most encouraging, and the possibility of producing a revised edition of the book explaining the protocol was discussed. **Alan Andersen** and **Ben Hoffmann** from CSIRO Sustainable Ecosystems briefly passed though on their way to Christmas Island, and called on Jonathan to compare notes on their various ant projects. **Gerry Cassis** from the University of NSW also dropped in to discuss the Heteroptera determinations that he is undertaking for the Barrow Island project. At the latest count the number of terrestrial invertebrates that have been identified down to species or morphospecies has reached 1,879.

University of Western Australia

School of Animal Biology

PhD student, **Touhidur Rahman,** attended the International Congress of Entomology in Durban, Africa, in July. Touhid presented a paper on "Use of spinosad and predatory mites for management of western flower thrips, *Frankliniella occidentalis*". Touhid is supervised by **Helen Spafford** and **Sonya Broughton**, and hopes to submit his thesis later this year.

Murdoch University

School of Biological Sciences and Biotechnology

Exciting and interesting news is reported from **Tendai Mapondera**, who has been awarded First Class Honours for his study on "Populaton genetics of the eucalypt weevil (*Gonipterus scutellatus*) diversity and origin of Western Australian introductions". *G. scutellatus* is widespread in southeast Australia where it has limited impact. World-wide it has been introduced to most countries where eucalypts are grown and has become a significant defoliator of eucalypts. There are no early records of *G. scutellatus* occurring in Western Australia (WA). However, by 2002 it was the most abundant insect species collected in eucalypt plantations in WA. Unlike other regions of Australia where the pest is endemic, *G. scutellatus* causes significant damage to Western Australian plantations and in the absence of an effective biological control, chemical control has been routinely used in heavily impacted plantations. *G. scutellatus* was collected from 59 locations in eastern Australia (Tasmania, Victoria, New South Wales and South Australia) and several locations in WA. A 474 bp fragment of the mtDNA gene Cytochrome oxidase 1 was sequenced for 275 isolates, all sequences were converted to amino acid sequences to confirm they code for cytochrome oxidase 1. From the sequence data 108 haplotypes were revealed. Only one haplotype was found in WA, whilst collections from eastern Australia were very diverse, especially Tasmania. In the phylogenetic analysis, insects identified as *G. scutellatus* resided in five distinct and highly supported lineages strongly suggesting that this is a species complex rather than an individual species. Only one of these lineages has been introduced to WA. The distribution and biology of the different lineages needs to be determined. This data set will allow

***Gonipterus scutellatus* adult (Left) and larval stage (Right).**

researchers world-wide to determine the identity and potentially origin of insects introduced into their countries.

This project was supervised by **Treena Burgess**- Program for Australian Tree Health – Murdoch University, **Mamuru Matsuki**, Department of Agriculture and Food and the morphological identifications of *G. scutellatus* were carried out by **Rolf Oberprieler** (CSIRO Entomology, Canberra).

Modika PERERA
WA Regional Councillor

NEW SOUTH WALES

Orange Agricultural Institute

The 11th Annual Entomologists of Orange Christmas Lunch was held at Wentworth Golf Club, Orange, on 17th December and attracted 16 attendees representing Charles Sturt University, NSW DPI Head Office, Orange Agricultural Institute, Agrisearch Services and retirees. We almost had four Chinese professors in attendance as well but, as noted below, they had to return home earlier than originally planned. A photo of the happy group lunching is in this issue.

Murray Fletcher hosted a visit by leafhopper taxonomist colleague **Prof Zhang Yalin** from the Northwest A&F University in Shaanxi, China on 16-17 December. Prof. Zhang was accompanied by three other professorial colleagues **Feng Jinian, Zhang Xing** and **Chen Hui**.

Murray gave them a chance to see more of Australia than cities and the inside of aircraft by collecting them from Canberra and bringing them to Orange by car. They were fascinated by the size of the properties between Yass and Cowra with lonely farmhouses surrounded by acres of paddocks. They almost saw a kangaroo on the journey too! In Orange, they were shown through the collections and recent work on leafhopper and planthopper taxonomy. Plans to jointly supervise postgraduate students of the Auchenorrhyncha through NW A&F University are also well advanced.

Unfortunately, their trip had to be curtailed because of the death, in China, of one of the icons of Chinese entomology and a long-time academic and professional mentor of all four visitors, **Prof Chou Io**. Our condolences were sent with them as they prepared for the memorial ceremony to mark their great loss. The unit also hosted a visit by a group of

11th Annual Entomologists of Orange Xmas Lunch. Left side of table (L to R): Aaron Simmons, Murray Fletcher, Peter Gillespie, Geoff Gurr, Marja Simpson, Catherine Phillips, Chris Bloomfield. Right side of table: Bernie Dominiak, Emma Cottage, Graham Thwaite, Holger Löcker, Birgit Löcker (with Sonya), Rosie Kerslake, Danuta Knihinicki, Catherine Gitau.

scientists from Liaoning Province in China although this group was not particularly entomologically focussed. **Merydyn Davison** showed them through the collections and highlighted the biosecurity aspects of our work in which they were particularly interested. **Birgit Löcker** has doubled her work time and is now here twice a week. This has allowed her to continue her work on the planthopper family Cixiidae with her first priority being the tribe Eucarpiini. She is also working to finish a project on the fauna of the Seychelles Islands which she and husband **Holger** are doing with **Werner Holzinger** of Graz, Austria.

Charles Sturt University, Orange

The tail end of 2008 was a busy period for the CSU Orange lab. **Catherine Gitau** returned from another visit to Paua New Guinea where an ACIAR-funded project is seeking the cause of Finschhafen Disorder, a mysterious oil palm problem. **Yong Seok Choi**, a postdoc visiting from South Korea is continuing work on the influence of silicon on induced plant defences. Preliminary results were enthusiastically received when presented at the "Silicon in Agriculture Conference" in South Africa by our collaborator, **Olivia Kvedaras**. **Geoff Gurr** returned a little tired from the Entomological Society of America meeting in Reno having presented three talks and done some late night jamming. His collaboration with the International Rice Research Institute to inject some ecology into the pesticide and host-plant resistance dominated world of rice pest management is gathering momentum after trips to the Philippines, China and Vietnam. **Dr Raman** has taken off for six months leave in Madras but no doubt will remain busy with entomological writing projects. Amongst the postgrads, 2008 saw **David Perovic** and **Sagrario Gamez-Virues** marry and celebrate the birth of a daughter, Sofia. Sagrario is now juggling baby care with making minor emendations to her PhD thesis. David also won the best student talk at the AES conference held in Orange in September.

Viliami Heimoana is in the midst of his last field season of Horticulture Australia-funded work on vegetable pest biocontrol. **Marja Simpson** is preparing for a visit to Orange by her overseas collaborators, **Steve Wratten** (Lincoln University) and **David James** (Washington State) to review progress in her ARC-funded project on herbivore-induced plant volatiles.

University of Wollongong

Forensic Entomology Research and Analysis Laboratory (FERAL)

Nothing has been contributed to recent editions of *Myrmecia* from FERAL, so this report needs to make up some lost ground! **James Wallman**, **Leigh Nelson**, **Aidan Johnson** and **Bryan Lessard** attended the ICE in Durban in July last year and all spoke about their research in the forensic entomology symposium. James also delivered the keynote address in the forensic entomology session at the International Symposium on the Forensic Sciences in Melbourne in October.

Kelly Meiklejohn and **Bryan Lessard** were both awarded first class Honours from UOW for 2008 for their theses on aspects of flesh fly (Kelly) and blowfly (Bryan) systematics and biology. Kelly and Bryan were the lucky recipients of ABRS Honours scholarships. Bryan leaves in 2009, with our best wishes, to move to the ANIC (CSIRO) where he has been offered a PhD position by **David Yeates** to work on the systematics of Tabanidae. **Leigh Nelson** submitted her PhD thesis in December. **James Wallman** and **Mark Dowton** eagerly await contracts to be finalised for their recently won three-year ARC Linkage grant in forensic entomology. The partner organisations are the Australian Federal Police, NSW Police, Victoria Police, Victorian Institute of Forensic Medicine and Forensic Science SA. **Aidan Johnson** and **Kelly Meiklejohn** have been awarded PhD scholarships to work on aspects of this grant. Active discussions have been underway with Partner Investigators **Melanie Archer**, from the VIFM in Melbourne, and **Stephen Cameron** (ANIC).

James Wallman currently serves as Chair of the forensic entomology Scientific Working Group (SWG) as part of the Medical Sciences Scientific Advisory Group (SAG). The SAG is part of a forensic science representative body called the Senior Managers of Australian and New Zealand Forensic Laboratories. Forensic entomology is included with forensic odontology, forensic anthropology and mortuary

management within the Medical Sciences SAG. The group meets annually, and in 2008 discussions took place in Adelaide. The aim is to represent forensic sciences at government level as well as act as a forum for practitioners to meet and discuss research, training and casework issues pertaining to their disciplines.

The University of New South Wales at the Australian Defence Force Academy, Canberra
School of Physical, Environmental and Mathematical Sciences

Alistair Drake returned from study leave at Rothamsted Research (UK) in July, with about half of the book he is co-authoring with fellow long-time radar entomologist **Don Reynolds** (University of Greenwich, UK) drafted. A heavy teaching schedule in session 2 precluded further progress but the end of the year saw him back on task, working mainly at the Institute of Applied Ecology of the University of Canberra where he again has a visiting position.

Haikou Wang was awarded his PhD in December. His thesis describes his use of the School's two Insect Monitoring Radars, at Bourke (NSW) and Thargomindah (Qld), to observe migrations of Australian plague locusts, and his contributions to the development of the IMR data-processing and dissemination system. Haikou now works with the Australian Plague Locust Commission in Canberra, where his duties include accessing and interpreting IMR data.

Just before Christmas, the IMR at Bourke, which had been producing high-quality data throughout the year, was quite severely damaged by a windstorm (probably a "mini-tornado"). It is not yet clear whether it can be returned to operation.

Murray FLETCHER
NSW Regional Councillor

SOUTH AUSTRALIA

The University of South Australia
Mosquito & Plant Research, Sansom Institute

Aishah Azil has joined the lab as the PhD student of **Craig Williams**. Aishah will be researching dengue vector surveillance methods in Australia (Cairns, with Scott Ritchie) and Malaysia. Honours students **Natasha Wilson** (*Culex pipiens* group mosquitoes) and **Katherine Leach** (off-target insecticide impacts) are now well and truly into their projects. **Mike Kokkinn's** adventures with mosquitoes and squid also continue apace.

Stephen Fricker (River Murray), **Sam Williams** (NW Adelaide), and **Mel Schneemilch** (urban wetlands), have all started their mosquito surveillance programs for another season. Mel also recently visit **Alan Andersen** in Darwin to be schooled in the art of ant identification. Mel is still raving about the experience.

Christie Bader, along with **Craig Williams**, visited Blenheim New Zealand in November, for a site visit to the last remaining location where Australian salt marsh mosquitoes (*Aedes camptorhynchus*) are thought to exist in that country. Christie is continuing her research on this species to assist the eradication effort in NZ. Prior to this, the lab hosted fieldworkers from NZ in October so they could study *Ae. camptorhynchus* in its native habitat.

Heavy rainfall in northern SA in December proved a boon for mosquito collections organised by **Christie Bader**. Excellent collections were made in the far north west of the state, revealing a number of arid zone species and extending our knowledge of them greatly.

The University of Adelaide

In early December **Gary Taylor** and **John Jennings** surveyed the herbivore fauna of the casuarinas in Western Australia, sampling extensively from Bunbury south of Perth, to Kalbarri and Shark Bay, returning to Perth via an inland route through WA's wheatbelt region. In all, during 4,000 km of travel, 10 species of Casuarina and Allocasuarina were sampled from over 80 field sites, yielding an extensive collection of casuarina-inhabiting insects including a number of new psyllid species.

Andy Austin was on study leave for the last four months of 2008 and spent time at Stuttgart Museum with **Lars Krogmann** working on a generic revision of Australian pompilid wasps, and **Norm Johnson** at Ohio State University working on the systematic of scelionid wasps, as well as attending the ESA meeting in Reno.

Andy has recently heard that he has been awarded the inaugural Science Faculty's Distinguished Research Award for 2008. A large contingent from Andy's lab also attended the International Subterranean Biology Conference in Freemantle in September, where PhD student **Tessa Bradford** won the runner-up student prize for her oral presentation on barcoding aquatic invertebrates in subterranean aquifers.

Chris McIntyre has started a PhD research project that will focus on predators of pests of brassica crops. His studies are supported by a grant from Horticulture Australia. **Craig Feutrill** has completed the installation of five suction traps that will be used to study the dispersal of currant-lettuce aphid and other aphids. This study forms part of his PhD research funded by the CRC for National Plant Biosecurity.

Mike Keller and **Joanne Kent** went on a cochineal (*Dactylopius* spp.)-collecting field trip in the Flinders Ranges in September 2008, collecting biocontrol agents of *Opuntia* (prickly pear cactus) species.

Otto Schmidt, Rick Roush, Tony Shelton and **Richard Glatz** have a three-year ARC Linkage grant starting this year for a project titled "Mechanisms and management of inducible tolerance to synthetic insecticides and *Bacillus thuringiensis* (Bt) formulations in Australian populations of diamondback moth", co-funded by GRDC, HAL and industry partners: Dow AgroSciences Australia Ltd, Syngenta Crop Protection Pty Limited and Du Pont Australia Ltd. Insects have an ability to respond to damaging environments by evolving genetic resistance or mobilising metabolic tolerance mechanisms. Recent observations of inducible tolerance to synthetic and biopesticides, which can be transmitted to offspring by a maternal effect has the potential to cause ecological and economic problems in agricultural production. We will use field collected Diamondback moth (DBM), a major insect pest in canola and brassica vegetable crops, to investigate the genetic implications of inducible tolerance for the integrated management of DBM and for the design of new resistance management strategies.

SARDI Entomology

Richard Glatz recently secured Horticulture Australia Ltd. funding for a post-doc position to characterise venom and virus proteins produced by the wasp *Diadegma semiclausum*, which is an important biological control agent of Diamondback moth (a serious pest of brassica crops). The proteins are known to disrupt development and immune function of the pest and could possibly be developed as sustainable insecticides. SARDI will receive close to $350,000 for the three-year project. Collaborators include **Sassan Asgari** from University of Queensland. Additionally, discussions are being held with **Xue-xin Chen** (Institute of Insect Sciences, Zhejiang University, Hangzhou, China) regarding further collaboration.

Richard attended the 10th Annual meeting of the Australasian Society for Chemosensory Science (AACSS) at the National Centre for Adult Stem Cell Research at Brisbane Innovation Park. He presented an oral paper titled "Utilisation of olfactory receptors for biosensing applications".

Ken Henry, Susan Ivory, Angela Lush and **Joanne Kent** submitted the application for the release of *Arytinnis hakani Loginova* (Hemiptera: Psyllidae) for the biological control of Cape broom. Jo presented the findings of this project at the 1st South Australian Weeds conference held October 2008, at the Plant Research Centre at The Waite Institute.

Jo is continuing to survey for tramp ants throughout South Australia, and will continue with this project until mid-late 2010.

Joanne KENT
SA Regional Councillor

ELECTRONIC PUBLICATION OF TAXONOMIC PAPERS

When authors describe new animal taxa, or take other actions that affect the names of animals, they follow procedures that are set out in the *The International Code of Zoological Nomenclature*. Among these procedures, the *Code* provides details of what media may be used for publication of new names. The present *Code* requires publication in a durable medium. To date, that has been interpreted as including paper and hard digital media such as CD-ROMs. This requirement is now being challenged as electronic publication becomes more common.

The International Commission on Zoological Nomenclature is considering amending the *Code* to allow electronic publication of new names and other nomenclatural actions. The proposed amendment to the *Code* was published in *Zootaxa* on October 17th, 2008, and is also being published in other journals, including the *Bulletin of Zoological Nomenclature,* 65 (4), December 2008. The publication of this proposed amendment begins a period of a year for community input. After that time a final amendment will be drafted and voted upon by the Commission.

The most important points in the proposed amendment are as follows:

- Electronic-only publications should be allowed, if mechanisms can be found that give reasonable assurance of the long-term accessibility of the information they contain.
- Some method of registration should be part of the mechanism of allowing electronic publication of names and nomenclatural acts.
- Physical works that are not paper-based (e.g. CD-ROMs, DVDs) should be disallowed.

The Commission will welcome responses to this proposed amendment by individuals and organisations. The proposed amendment is available in full here: International Commission on Zoological Nomenclature (2008). Proposed amendment of the *International Code of Zoological Nomenclature* to expand and refine methods of publication. *Zootaxa*, 1908, 57-67. http://www.mapress.com/zootaxa/2008/f/zt01908p067.pdf.

Further information about the Commission and the *Code* can be found here: http://www.iczn.org/

Correspondence should be addressed to the Executive Secretary, ICZN, iczn@nhm.ac.uk

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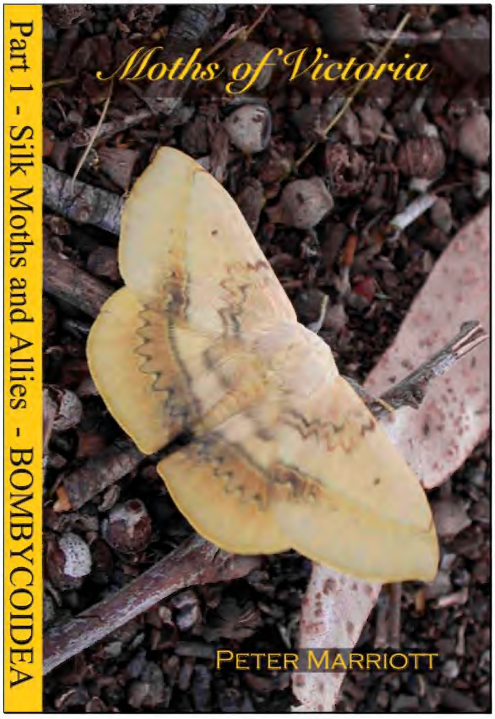
Email: Bruce.Halliday@csiro.au
Bruce HALLIDAY

BOOK REVIEW

Moths of Victoria. Part 1. Silk Moths and Allies. Bombycoidea. By Peter Marriott. Published by The Entomological Society of Victoria. 2008. Softcover. Pp. 32 plus CD containing 130 additional pages.



Available from vicmoth@entsocvic.org.au or Ian Endersby, 56 Looker Road, Montmorency, 3094, Vic. Cost $12. Packing and postage within Australia; 1-2 copies $3, 3-4 copies $4.

Peter Marriott joined the ranks of moth enthusiasts relatively late in life when he volunteered to re-curate the moth collection at the Museum of Victoria. A teacher and scouter, he quickly made contact with other lepidopterists and, limited in forming a collection by circumstances, adopted photography of moths as an interest.

The booklet illustrates in colour every species known from Victoria and in this it is unique. All previous moth books have illustrated only a selection of species; this is the first with complete coverage. This coverage even extends to most of the well-known undescribed species and a few species expected to be in Victoria but not yet recorded. The booklet gives an introduction to the moths, an outline of each family and then colour illustrations of preserved specimens of both sexes of each species, sometimes also of larvae or live adults, and an accurate name. The CD expands this information greatly, adding collecting data and repository for illustrated specimens and usually a figure showing flight times and a distribution map and some pertinent comments about the species. Comments include how to distinguish one species from another where they are similar. Most of the specimens were photographed at Museum Victoria with a few from the ANIC and private collections.

Peter has consulted very widely amongst friends and colleagues to make the booklet and CD as accurate, comprehensive, reliable and up-to-date as possible. Altogether it is a great boon for Victorian entomology and will be useful in other States which share some widespread species.

The booklet has two minor weaknesses. The first, which Peter did his best to minimise, is that there are glaring gaps in our knowledge of the fauna. The second is that sometimes old specimens were illustrated when fresh and better set specimens were available. However he did an excellent job in photoshopping the only known male of one species when he only had a poor photograph of a battered holotype (and he flags the image as photoshopped).

In summary, it is an essential booklet for anyone with an interest in Lepidoptera in Australia, from beginners to old-hands. All for less than the cost of lunch and a cuppa.

Currently a second volume is in preparation to cover the oenosandrids, notodonts, lymantriids, arctiids and nolids. This will be more challenging as they are more poorly known than the bombycoids, but funding is in hand. Further volumes are planned. The Entomological Society of Victoria and the Norman Wettenhall Foundation are to be congratulated for their support of this series.

Ted EDWARDS

ENTOMOLOGY IN THE NEWS

Is the Argentine ant the first insect with a bounty on its head?

Well, nest really… Murray Fletcher has countered an article in the last Myrmecia concerning Bounty Hunters with a counter claim of his own. Murray asserts that the NSW Argentine Ant Eradication Campaign was the first to offer a bounty for the discovery of a new infestation in New South Wales.

The bounty was originally $50, but rose to $100 later in the campaign when new infestations were less common. This bounty was offered from the mid 1970s to 1984, when a large infestation was found in Lane Cove. Court action by residents and parents of children at Lane Cove West Primary School stopped treatments with the chemicals used at the time. Murray remembers speaking to one Lane Cove resident who said she thought she'd seen Argentine ants, but didn't report it because she didn't need the money! If only she had, the infestation might not have been so large and the campaign may have been able to continue to achieve eradication of the species.

MAPPING LADYBIRD DISTRIBUTIONS WITH HELP FROM THE PUBLIC

By encouraging the public to report which ladybird species they find in their backyard, the ABC program 'Catalyst' is helping Adam Slipinski (CSIRO Canberra) to determine whether the Multicoloured ladybird, *Harmonia axyridis*, is present in Australia, as well determining the distribution of other ladybird species. People are being encouraged to take photographs of ladybirds, identify them to

species using the excellent 'Ladybirds in Australia' website: www.ento.csiro.au/biology/ladybirds/ladybirds.htm. The site includes photos of ladybirds and a LucID key. The image is then uploaded to the Catalyst ladybird website, and the results are compiled on an interactive map of Australia.

If you'd like to participate in the ladybird survey and possibly win a copy of 'Australian Ladybird Beetles' - there are categories for Best Backyard Entomologist, best photograph and most interesting find, go to the Catalyst web-site (http://www.abc.net.au/catalyst/ladybirds/). But be quick, the survey ends in March.

***Harmonia axyridis*. Photo Scott Bauer, USDA.**

Harmonia axyridis is native to Asia and is regarded to be a serious biodiversity threat. Imported into California in 1916 for biocontrol of aphids, it established and extended its distribution north into Canada. In Europe, *H. axyridis* was deliberately released into Italy and other European countries, establishing and becoming common in Germany (2000), Holland (2002), Belgium (2002) and England (2004). *H. axyridis* displaces native ladybird species by outcompeting them for food, and by feeding on the larvae of other ladybird species. It is also regarded to be an economic pest, consuming soft fruit (grapes, apples, peaches, plums, pears, pumpkins), and can invade people's homes in huge numbers (hundreds of thousands) when overwintering. *H. axyridis* is 5-8mm in length and polymorphic, with elytra ranging from pale yellow-orange to bright red-orange, often with up to 20 black spots

Sonya BROUGHTON

FIRST COMMERCIAL CULTIVATION OF GM COTTON IN THE EAST KIMBERLEY

In Western Australia, the cultivation of genetically modified (GM) crops is prohibited by the GM Crops Free Areas Act 2003 (WA). On the 14 November 2008, the Western Australian Government announced the decision to allow the commercial cultivation of GM cotton in East Kimberley's Ord River Irrigation Area (ORIA). The Government has made this decision after an extensive review of GM cotton trials carried out in the Ord River area during the past decade. The research results have shown that there are no agronomic problems, including the control of insects, in growing GM cotton in the ORIA and there have been no environmental concerns with the GM cotton crops currently being trialled.

Australia has a rigorous regulatory system that ensures only GM crops which the Commonwealth Office of Gene Technology Regulator (OGTR) has approved to be safe to human health and the environment as the non-GM crop varieties are released. The OGTR consults with expert committees, Government departments, the Environment Minister and the public during their lengthy case-by-case risk assessment of GM crops. The Australian regulatory system for GM organisms is regarded internationally as one of the finest in the world.

GM cotton has been grown in Queensland and New South Wales since 1996. These cotton varieties are insect resistant, herbicide tolerant or a combination of both. Over 95 per cent of Australia's cotton growers planted GM cotton in the 2007/08 season.

About 30 species of insects attack cotton, causing serious damage to the crop. Cotton's main insect pests are the *Helicoverpa armigera* (Bollworm) and *Helicoverpa punctigera* (Budworm) larvae, aphids, thrips, mirids and white fly. When cotton was first grown in ORIA during the 1960s and 1970s prior to GM technology the crop failed due to high pest pressures. Large quantities of insecticides were applied; over 16,000 grams per hectare of Dichloro-Diphenyl-Trichloroethane (DDT) along with other insecticides were sprayed to control cotton Bollworm the major pest in ORIA. The previous GM insect resistant trial plots in the ORIA demonstrated that the rate of insecticides used has decreased significantly. The pesticides

currently used are usually specific to one or two types of pests (i.e. mites and/or aphids, etc) and are non-persistent.

GM cotton varieties that are available for Australian cotton growers are as follows:

- Insect resistance (Ingard®, Bollgard® and Bollgard II®)
- Herbicide tolerance (Roundup Ready® and Roundup Ready Flex®).

GM insect resistant cotton varieties - Ingard®, Bollgard® and Bollgard II® contain genes from a naturally occurring soil bacterium Bacillus thuringiensis (Bt). These Bt genes produce proteins that bind to separate specific receptors on insect mid-gut causing death. Bt genes are effective in controlling newly hatched Bollworm and Budworm larvae, which are serious pests of cotton. In 2003, Bollgard II® (contains two Bt genes) replaced INGARD® (contained a single gene) which had been grown since 1996. Bt organic sprays under the trade mark of "Dipel" have been used for over 50 years in agriculture.

GM herbicide tolerant cotton varieties - Roundup Ready® and Roundup Ready Flex® contains genes from the soil bacterium Agrobacterium tumefaciens. These Roundup ready varieties are tolerant to the common herbicide glyphosate during the early growth stage. Growers can apply Roundup herbicides over Roundup Ready® and Roundup Ready Flex® cotton and only kill the weeds. These GM cotton varieties can reduce the amount of soil cultivation and herbicide required on cotton crops to control weeds and facilitates healthier soils through less soil disruption and reductions in residual herbicides.

Since the introduction of GM cotton varieties in Australia, there has been 85 per cent reduction in insecticides and herbicides used, reduced fuel use, enhanced water-use efficiency and minimized cultivation, which in turn reduces the carbon footprint . Insect control tends to be more specific, allowing beneficial (predatory) insects to remain in the crops. Yield comparisons between 1996-97 and 2004-05 have shown that Bt cotton varieties yield at similar levels to conventional cotton.

In order to sustain these benefits, the risk of insects becoming resistant to Bt proteins needs to be managed. The cotton industry has developed and implements an Insect Resistant Management Strategy. Farmers are required to follow a Risk Management Plan when growing Bt cotton.

The go-ahead for GM cotton in the ORIA will provide a new opportunity for growers, and potentially result in a major new profitable industry for Western Australia.

Modika PERERA

WHY DO LOCUSTS ABANDON THE QUIET SOLITARY LIFE TO JOIN THE SWARM?

18 December 2008

http://www.rothamsted.ac.uk/corporate/PressReleases/PressReleases.php?PRID=55

Researchers at Rothamsted Research and their colleagues at the University of Sydney in Australia may have an answer to a perplexing ecological and evolutionary problem: why it is that locusts switch from an innocuous solitary lifestyle to form huge cohesive groups that can devastate crops and strip fields bare. Their report appears in the December 18th Current Biology.

In addition to being a notorious outbreak pest, locusts display a remarkable and potentially devastating phenomenon, known as density-dependent phase polyphenism. Changes in local population density cause locusts to abandon their cryptic, solitary state to form migratory swarms that can contain billions of insects and travel hundreds of kilometres each day. At such times, the gregarious 'phase' not only behaves differently from the solitary form, it also differs in physiology, colour, shape and many other traits – so much so that the two 'phases' were originally thought to be completely different species.

Density-dependent phase polyphenism has intrigued biologists for decades. Despite this interest, there was until now no satisfactory explanation for the evolution of the phenomenon. Using a model from 'percolation theory', the researchers show that "it would be highly disadvantageous for locust individuals to continue indefinitely in a dispersed spatial distribution as their population densities increase". Switching to an extremely clumped distribution is advantageous because it prevents a mobile predator (a stork, say) moving across the landscape 'mopping up' small patches of locusts as it goes. Instead, vast numbers of locusts are 'elsewhere', grouped together in a

few huge swarms. The finding suggests "that selection pressure from predators has been a key factor in driving the evolution of the insects' gregarious tendencies". And, the researchers said, "the theory will no doubt apply to other species and circumstances as well". For example, aggregation behaviours may have evolved in insects as an anti-parasite defence mechanism because, by aggregating in groups at high densities, there is less chance of a parasite or pathogen moving between infectious hosts.

HIND WINGS HELP BUTTERFLIES MAKE SWIFT TURNS TO EVADE PREDATORS

1 January 2009

http://www.biologynews.net/archives/2009/01/08/hind_wings_help_butterflies_make_swift_turns_to_evade_predators_study_finds.html

New tires allow race cars to take tight turns at high speeds. Hind wings give moths and butterflies similar advantages: They are not necessary for basic flight but help these creatures take tight turns to evade predators.

"To escape a predator, you don't have to be fast, you just have to be more erratic," said Tom Eisner, a world authority on animal behaviour, ecology and evolution and the Jacob Gould Schurman Professor Emeritus of Chemical Ecology at Cornell. Eisner is co-author of a study on butterfly wings recently published in the Proceedings of the National Academy of Sciences (105: 43).

The study proposes that in the course of evolution, the ability of butterflies to evade predators became linked with bright colouring, as an added protection. In evolutionary terms, gaudy colours are usually a sign to such predators as birds that a prey species has a protective quality, such as a bad taste or great agility, and that chasing them isn't worth the energy. Anyone who has tried to net a colourful butterfly knows they are hard to catch, but this is the first study to show that a butterfly's hind wings are responsible for making them evasive.

Eisner and the paper's lead author, Benjamin Jantzen, (M.S. physics '02), a doctoral student in philosophy of science at Carnegie Mellon University, clipped off the hind wings of butterflies and then filmed their flight using two cameras to get three-dimensional views of their flight trajectories; then they analysed and plotted on a computer the insects' flight velocity, acceleration, how fast they changed direction, the curvature of their path and more.

They found that clipping the back wings did not affect basic flight, but "we were able to show that removing the hind wings cut their turning acceleration in half," said Jantzen. The butterfly's hind wings scoop air and provide extra force to quickly turn when chased.

Eisner added that some butterflies have other qualities that are linked with their bright colouring as a sign for predators not to eat them. Monarchs also taste bad, for example. Other studies have shown that distasteful butterflies are slower and easier to catch. Butterfly wings are also scaly, slipping easily from a bird's bill, and if the butterfly is caught it's found to be "mostly wrapper and very little candy," said Eisner.

"The wings are also colourful advertising for the whole group," said Jantzen. "The colours say, we are butterflies, don't bother to chase us, because you won't catch us."

COMING EVENTS

The meetings below are sorted by location, with Australian and New Zealand conferences listed first.

DARWIN 200: Evolution and Biodiversity
25 - 28 September 2009
Darwin, Australia
Australian Entomological Society's 40th AGM & Scientific Conference / Society of Australian Systematic Biologists / 9th Invertebrate Biodiversity & Conservation / Australian Coral Reefs Society

DARWIN 200: Evolution and Biodiversity
The Combined Australian Entomological Society's 40th AGM & Scientific Conference / Society of Australian Systematic Biologists / 9th Invertebrate Biodiversity & Conservation Conference

25 – 28 September 2009

Darwin, Northern Territory, Australia

On behalf of the organising committee, we extend a warm invitation to you to attend our special meeting in Darwin.

All intending delegates are encouraged to submit an "Expression of Interest Form" as soon as possible to assist the organising committee in the early stages of the conference planning. Read more about the proposed program and symposia by visiting the website www.evolutionbiodiversity2009.org in

conjunction with The 84th Australian Coral Reef Society 2009 Conference.

Registration and accommodation details will be available February 2009.

The year 2009 marks the 200th anniversary of the birth of Charles Darwin and the 150th anniversary of his work The Origin of Species. We have included a link to the CHARLES DARWIN SYMPOSIUM which is being held immediately prior to the joint Conference. This Symposium will provide an opportunity to appreciate, debate, and even challenge Darwin's findings, and will bring together an exciting range of speakers from around the globe.

IX International Symposium on Thysanoptera and Tospoviruses
Sea World Resort, Gold Coast, Australia
31 August to 4 September 2009

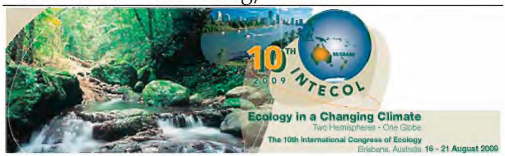
IX International Symposium on Thysanoptera and Tospoviruses

August 31 - September 4 2009

Sea World Resort, Gold Coast, Queensland.

This, the ninth Symposium, will again provide an unequalled opportunity for those interested in thrips, tospoviruses and their interactions to meet and foster further discussion and research in this highly relevant and exciting area of biological science.

The format for the meeting will be similar to previous meetings of the group. On-line registration opens January 31.
Website: www.istt09.org/



10th International Congress of Ecology
16 - 21 August 2009
Brisbane, Queensland

The Officers and Board of INTECOL are delighted to announce that the 10th International Congress of Ecology will be held in Brisbane, Australia, 16-21 August 2009. The Congress will be hosted by the Ecological Society of Australia in partnership with the New Zealand Ecological Society. This is the first time that an International Congress of Ecology will have been held in the southern Hemisphere.
Web Site: www.intecol10.org

The Entomological Society of New Zealand

Islands and Hotspots
April 5-8 2009
Auckland, New Zealand

This year's conference will showcase advances in entomological research, including the following symposia:

1. Hot spots & Cold spots
2. Island Biosecurity
3. Insect-plant interactions

Registration and abstracts close 13th February 2009, after which late fees will apply. Spaces for oral presentations may be limited, so the sooner you send in your registration and abstract the better (particularly if you would like to be included in one of the symposia).
Website: www.ento.org.nz.

Bring Back the Butterflies!
Conference of the Monarch Butterfly NZ Trust
April 11 - 12 (Easter) 2009
Bureta Park, Tauranga, NZ

This event is for those interested in the conservation of Lepidoptera of NZ, biodiversity, and using butterflies in the classroom to foster an awareness of, and passion for, the stewardship of our country's unique natural heritage.
There will also be workshops and presentations from non-professionals, e.g. butterfly photography, butterfly gardening, teaching with butterflies which we believe will inspire gardeners and teachers to consider butterflies (and thus other insect life) in their gardens and as learning tools to inspire future scientists.

For more information email: jacqui@monarch.org.nz.

New Zealand Plant Protection Society Conference 2009
August 2009
Dunedin, NZ
Website: www.nzpps.org/conference2009.php

6th International IPM Symposium, 'Transcending Boundaries'
24-26 March 2009
Portland, Oregon
Website:
www.ipmcenters.org/ipmsymposium09

X th International Congress
of Orthopterology , Antalya , Turkey
June 21 - 25 , 2009
Akdeniz University
Orthopterists' Society

10th International Congress of Orthoptery,
June 21-25, 2009
Anyalya, TURKEY
Abstract submissions due 1 April.
Website: www.ico2009.org/index.html

13th International Symposium on Trichoptera
Białowieża, POLAND
June 22 – 27, 2009
Website: www.biol.uni.lodz.pl/trichoptera2009/

IOBC Meetings/Workshops

12-16 May 2009
Granada, SPAIN
5th Meeting, IOBC/WPRS working group, induced resistance in plants against insects and diseases.
Contact: M.J. Pozo, MariaJose.Pozo@eez.csic.es.
Website: www.fvccee.uji.es.

18 May-12 June 2009
Wageningen, THE NETHERLANDS

International course: Integrated pest management (IPM) and Food Safety
Contact: H. Stoetzer, Huub.Stoetzer@wur.nl.
Website: tinyurl.com/3offft.

06-11 September 2009
Crete, GREECE
Integrated Control In Protected Crops, Mediterranean Climate, IOBC/WPRS Working Group Meeting.
Contact: C. Castane, Cristina.Castane@irta.es.

02-08 October 2009
Dubrovnik, CROATIA
IOBC/WPRS Working Group "Integrated Protection In Field Vegetable Crops".
Contact: R. Collier:
Rosemary.Collier@warwick.ac.uk.

October 7-9 2009
Dubrovnik, CROATIA.
IOBC/WPRS Working Group, Pesticides And Beneficial Organisms.
Contact: B. Baric, Baric@agr.hr.

November 1-4 2009
Staufen im Breisgau, GERMANY.
IOBC/WPRS Working Group "Integrated Protection and Production In Viticulture".
Contact: A. Calonnec,
Calonnec@bordeaux.inra.fr.
Website : tinyurl.com/6nma59.

10th International Conference on the Ecology and Management of Alien Plant Invasions (EMAPI)
23-27 August 2009
Stellenbosch, SOUTH AFRICA.

The EMAPI conference series started in April 1992 with the 1st International Workshop on the Ecology and Management of Invasive Riparian and Aquatic Plants at Loughborough University in the U.K. EMAPI 2 was held in the Czech Republic in 1993. Since then, EMAPI conferences have been held every two years (in Arizona, Germany, Italy, the United Kingdom, Florida, Poland, and Australia). They are now well established as the premier international forum for researchers working on all aspects relating to the ecology and management of alien plant invasions.
Contact: D. Richardson, rich@sun.ac.za.
Website: emapi2009.co.za/

Entomological Society of America Annual Meeting
13-17 December 2009
Indianapolis, USA

The Annual Meeting of the Entomological Society of America is its premier event each year. For a four-day period, thousands of entomologists and professionals from related

disciplines gather from around the world to exchange scientific information and ideas, enhance professional knowledge and skills, network with colleagues and re-acquaint with old friends, and conduct the business of the Society.
Contact: ESA, 9301 Annapolis Rd., Lanham, MD 20706-3115, USA.

Email: meet@entsoc.org.
Website : www.entsoc.org.

MEMBERSHIP NOMINATION FORM

To obtain a nomination form, please download from http://www.agric.nsw.gov.au/Hort/ascu/myrmecia/aesmemform.pdf.

GENERAL INTEREST

IAPPS

The Executive Board of the **International Association for the Plant Protection Sciences** (IAPPS), invites you to join IAPPS, an association of plant protection specialists with a global outlook. We acknowledge your expertise in IPM and your contributions to your local, national and regional plant protection organizations and welcome you to contribute your expertise to promoting IPM on a global basis. IAPPS membership has quadrupled since 2004 and we want you to be a part of this growing association. Please note that IAPPS is the only global association that represents all of the IPM disciplines. For more information about IAPPS see our website <http://www.plantprotection.org>.

APS
The American Phytopathological Society (APS) is a non-profit, professional, scientific organization dedicated to the study and control of plant diseases.

This is an excellent time to start your IAPPS membership as we are now beginning to make plans for the next International Plant Protection Congress (IPPC) to be held in association with the American Phytopathology Society in Honolulu, Hawaii August 6-10, 2011. **IAPPS members will receive a reduced registration fee for the congress which will more than pay for the IAPPS membership fee.** ***We are also offering a special introductory membership offer – see***

IAPPS VISION

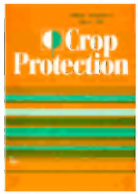
IAPPS is a global forum of scientists providing information and policy advice on sustainable plant health management practices. IAPPS goal is to insure production of sufficient quality of food/feed/fiber for a growing world population through sustainable plant health management strategies.

IAPPS OBJECTI VES

- Provide for the organization, management and oversight of the International Plant Protection Congresses (IPPCs) as major international fora for integrating and disseminating crop protection information and technology.
- Promote the application of the integrated pest management (IPM) approach in research and in the application of the plant protection sciences.
- Promote the coordination and integration of research and extension in the plant protection sciences on a regional and global basis.
- Sponsor a plant protection journal that will feature articles on integrated pest management research and extension.
- Provide counsel and policy guidance for the global plant protection community.
- Promote the importance of intensified plant protection programs as a means of increasing productivity to feed the world's growing population.

Join the International Association for the Plant Protection Sciences

IAPPS is a global network committed to enhanced communication and integration of the plant protection sciences. Individual memberships are normally $US50 for scientists from developed countries but **for this introductory offer** you can subscribe for $US35 - the rate for scientists from developing countries (Note this is restricted to the online version of Crop Protection). Some of the IAPPS membership benefits are:



- Access to the full-text electronic edition of the peer-reviewed, internationally recognized Crop Protection Journal online plus the option for subscribing to the print edition of the journal delivered to your address for an additional $85.00
- Publish in *Crop Protection* without page charges
- Free publishing of IPM notes of interest (such as impact of your IPM program, announcements of regional meetings etc.) in the IAPPS Newsletter in Crop Protection without charge
- Online access to the Secretary General's monthly newsletter
- Reduced registration fees for the International Plant Protection Congresses
- Access to a global network of plant protection scientists for interchange and scientific support
- The opportunity to provide input into the program planning and participation in the International Plant Protection Congresses

You may join and pay for membership by credit or debit card through our website: **http://www.plantprotection.org** (click on: Membership Applications/Renewals), *for this special offer, select the developing country scientists option.* Alternatively you can pay by Western Union money order (please inform us of money order # by email to eheinric@vt.edu) or by US$ check sent to:

E.A. "Short" Heinrichs
IAPPS
6517 S. 19th St.
Lincoln, NE 68512 USA

For more information please send an email message to: eheinric@vt.edu

On behalf of the IAPPS Board of Directors, we encourage your active participation in IAPPS by becoming a member, and through your membership, working with us to promote IPM in a global effort through research, technology transfer and training in an effort to help mitigate the current food production crisis.

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